No. 8400062

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Nickerson American Plant Breeders, Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF *eighteen* YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS PRESCRIBED BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

WHEAT

'Meggie'

In Testimony Whereof, *I have hereunto set my hand and caused the seal of the* Plant Variety Protection Office *to be affixed at the City of* Washington *this* 30th *day of* August *in the year of our Lord one thousand nine hundred and* eighty-five.

Attest:

Kenneth A. Evans
Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

John R. Block
Secretary of Agriculture

UNITED STATES DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, POULTRY, GRAIN & SEED DIVISION

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

INSTRUCTIONS: *See Reverse.*

FORM APPROVED
OMB NO. 40-R3822

No certificate for plant variety protection may be issued unless a completed application form has been received (5 U.S.C. 553).

1a. TEMPORARY DESIGNATION OF VARIETY	1b. VARIETY NAME	FOR OFFICIAL USE ONLY
HW79-36	Meggie	PV NUMBER 8400062
2. KIND NAME: Hard Red Winter Wheat	3. GENUS AND SPECIES NAME: Triticum aestivum	FILING DATE 3-8-84 / TIME 2:30 P.M.
4. FAMILY NAME (BOTANICAL): Gramineae	5. DATE OF DETERMINATION: 1) Fall 1979 2) Fall 1981	FEE RECEIVED $1,800.00 $200.00 / DATE 3/8/84 7/22/85

6. NAME OF APPLICANT(S)	7. ADDRESS (Street and No. or R.F.D. No., City, State, and ZIP Code)	8. TELEPHONE AREA CODE AND NUMBER
NICKERSON ~~North~~ American Plant Breeders, Inc.	5201 Johson Dr., P.O. Box 2955 Mission, KS 66201	913-384-4940 KS 303-532-3721 CO

9. IF THE NAMED APPLICANT IS NOT A PERSON, FORM OF ORGANIZATION: (Corporation, partnership, association, etc.)	10. IF INCORPORATED, GIVE STATE AND DATE OF INCORPORATION	11. DATE OF INCORPORATION
Corporation	Delaware, January 19, 1983	January 19, 198

12. NAME AND MAILING ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS:

~~G.E. Dixon~~ R.E. Heiner
P.O. Box 2955
Mission, KS 66201

~~R.L. Heiner~~ Robert F. Bruns or C. Bruns
P.O. Box 30
Berthoud, CO 80513

13. CHECK BOX BELOW FOR EACH ATTACHMENT SUBMITTED:

- [X] 13A. Exhibit A, Origin and Breeding History of the Variety *(See Section 52 of the Plant Variety Protection Act.)*
- [X] 13B. Exhibit B, Novelty Statement.
- [X] 13C. Exhibit C, Objective Description of the Variety *(Request form from Plant Variety Protection Office.)*
- [X] 13D. Exhibit D, Additional Description of the Variety.
- [X] 13E. Exhibit E., Quality Data.

14a. DOES THE APPLICANT(S) SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED? *(See Section 83(a). (If "Yes," answer 14B and 14C below.)* [X] YES [ ] NO

14b. DOES THE APPLICANT(S) SPECIFY THAT THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?	14c. IF "YES," TO 14B, HOW MANY GENERATIONS OF PRODUCTION BEYOND BREEDER SEED?
[X] YES [ ] NO	[X] FOUNDATION [X] REGISTERED [X] CERTIFIED

15a. DID THE APPLICANT(S) FILE FOR PROTECTION OF THIS VARIETY IN OTHER COUNTRIES? [ ] YES [X] NO *(If "Yes," give name of countries and dates.)*

15b. HAVE RIGHTS BEEN GRANTED THIS VARIETY IN OTHER COUNTRIES? [ ] YES [X] NO *(If "Yes," give name of countries and dates.)*

16. DOES THE APPLICANT(S) AGREE TO THE PUBLICATION OF HIS/HER (THEIR) NAME(S) AND ADDRESS IN THE OFFICIAL JOURNAL? [X] YES [ ] NO

17. The applicant(s) declare(s) that a viable sample of basic seed of this variety will be furnished with the application and will be replenished upon request in accordance with such regulations as may be applicable.

The undersigned applicant(s) is (are) the owner(s) of this sexually reproduced novel plant variety, and believe(s) that the variety is distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Act.

Applicant(s) is (are) informed that false representation herein can jeopardize protection and result in penalties.

17 February 1984 (DATE) — Robert E Heiner (SIGNATURE OF APPLICANT)

20 February 1984 (DATE) — (SIGNATURE OF APPLICANT)

FORM GR-470 (1-78)

Exhibit A

Origin and Breeding History of Meggie

Pedigree: II21183/C0652643//Lancer/3/KS62136/C0695552

Date of Cross: 1973

History: The breeding history of Meggie started with the final cross in 1973. The F_1 was planted the fall of 1974 and harvested in 1975. The F_2 was grown and evaluated as a population in 1976. Single plants were selected out of F_3 space planted populations in 1977. Seed from these plots were grown and observed at three locations in 1978. One of the more promising lines was put into regional yield testing in 1979 and given a testing designation HW79-36. Three hundred head-rows were grown in 1981 to start the initial breeders seed stocks.

Meggie is uniform and stable. Less than 1% of the plants have been rogued from the initial seed increases. The majority of these rogued plants were six to ten cm taller than Meggie. Less than 1% of these off-type plants may be encountered in subsequent generations.

Exhibit B

Novelty Statement

Meggie is most similar to the hard red winter wheat Wings. However, it can be distinguished by the following morphological characteristics:

- Meggie has hairs on the last internode of the rachis. Wings is patented as having no hairs on the last internode of the rachis.

- Meggie has auricle anthocyanin and auricle hairs. Wings is patented as displaying no auricle hairs or auricle anthocyanin.

- Meggie has an oblique shoulder. Wings is patented as having a rounded shoulder shape.

- Meggie has midlong length brush hairs. Wings is patented as having short brush hairs.

'Meggie'

FORM APPROVED: OMB NO. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
LIVESTOCK, MEAT, GRAIN & SEED DIVISION
BELTSVILLE, MARYLAND 20705

EXHIBIT C
(Wheat)

OBJECTIVE DESCRIPTION OF VARIETY

WHEAT (*TRITICUM SPP.*)

INSTRUCTIONS: *See Reverse.*

NAME OF APPLICANT(S)
NICKERSON
~~North~~ American Plant Breeders, Inc.

ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)*
5201 Johnson Dr., P.O. Box 2955
Mission, KS 66201

FOR OFFICIAL USE ONLY

PVPO NUMBER
8400062

VARIETY NAME OR TEMPORARY DESIGNATION
MEGGIE

Place the appropriate number that describes the varietal character of this variety in the boxes below.
Place a zero in first box (e.g. [0][8][9] or [0][9]) when number is either 99 or less or 9 or less.

1. KIND:

[1] 1 = COMMON 2 = DURUM 3 = EMMER 4 = SPELT 5 = POLISH 6 = POULARD 7 = CLUB

2. TYPE:

[2] 1 = SPRING 2 = WINTER 3 = OTHER *(Specify)* _____

[2] 1 = SOFT 2 = HARD 3 = OTHER *(Specify)* _____

[2] 1 = WHITE 2 = RED 3 = OTHER *(Specify)* _____

3. SEASON - NUMBER OF DAYS FROM [redacted] TO:

January 1

[2][3][0] FIRST FLOWERING

[2][3][6] LAST FLOWERING

4. MATURITY *(50% Flowering)*:

[-][-] NO. OF DAYS *EARLIER* THAN .....

[0][1] NO. OF DAYS *LATER* THAN .....

[-] [2] 1 = ARTHUR 2 = SCOUT 3 = CHRIS 4 = LEMHI 5 = NUGAINES 6 = LEEDS

5. PLANT HEIGHT *(From soil level to top of head)*:

[0][9][2] CM. HIGH

[-][-] CM. TALLER THAN .....

[0][2] CM. SHORTER THAN .....

[-] [7] 1 = ARTHUR 2 = SCOUT 3 = CHRIS 4 = LEMHI 5 = NUGAINES 6 = LEEDS 7=Wings

6. PLANT COLOR AT BOOTING *(See reverse)*:

[2] 1 = YELLOW GREEN 2 = GREEN 3 = BLUE GREEN

7. ANTHER COLOR:

[1] 1 = YELLOW 2 = PURPLE

8. STEM:

[1] Anthocyanin: 1 = ABSENT 2 = PRESENT

[2] Hairiness of last internode of rachis: 1 = ABSENT 2 = PRESENT

[0][4] NO. OF NODES *(Originating from node above ground)*

[2] Waxy bloom: 1 = ABSENT 2 = PRESENT

[1] Internodes: 1 = HOLLOW 2 = SOLID

[2][1] CM. INTERNODE LENGTH BETWEEN FLAG LEAF AND LEAF BELOW

9. AURICLES:

[2] Anthocyanin: 1 = ABSENT 2 = PRESENT

[2] Hairiness: 1 = ABSENT 2 = PRESENT

10. LEAF:

[1] Flag leaf at booting stage: 1 = ERECT 2 = RECURVED 3 = OTHER *(Specify)*: _____

[2] Flag leaf: 1 = NOT TWISTED 2 = TWISTED

[1] Hairs of first leaf sheath: 1 = ABSENT 2 = PRESENT

[2] Waxy bloom of flag leaf sheath: 1 = ABSENT 2 = PRESENT

[0][9] MM. LEAF WIDTH *(First leaf below flag leaf)*

[2][0] CM. LEAF LENGTH *(First leaf below flag leaf)*:

FORM LPGS-470-6 (7-81) (Edition of 3-79 may be used)

'Meggie'

8400062

FORM GR-470-6 (REVERSE)

11. HEAD:

[3] Density: 1 = LAX 2 = DENSE 3=Middense (average 43.0 mm)

[1] Shape: 1 = TAPERING 2 = STRAP 3 = CLAVATE 4 = OTHER (Specify) _____

[4] Awnedness: 1 = AWNLESS 2 = APICALLY AWNLETED 3 = AWNLETED 4 = AWNED

[1] Color at maturity: 1 = WHITE 2 = YELLOW 3 = PINK 4 = RED 5 = BROWN 6 = BLACK 7 = OTHER (Specify): _____

[7.6] CM. LENGTH

[11] MM. WIDTH

12. GLUMES AT MATURITY:

[2] Length: 1 = SHORT (CA. 7 mm.) 2 = MEDIUM (CA. 8 mm.) 3 = LONG (CA. 9 mm.) (average 7.6 mm)

[2] Width: 1 = NARROW (CA. 3 mm.) 2 = MEDIUM (CA. 3.5 mm.) 3 = WIDE (CA. 4 mm.) (average 3.6 mm)

[2] Shoulder shape: 1 = WANTING 2 = OBLIQUE 3 = ROUNDED 4 = SQUARE 5 = ELEVATED 6 = APICULATE

[3] Beak: 1 = OBTUSE 2 = ACUTE 3 = ACUMINATE (average approx. 5 mm)

13. COLEOPTILE COLOR:

[1] 1 = WHITE 2 = RED 3 = PURPLE

14. SEEDLING ANTHOCYANIN:

[1] 1 = ABSENT 2 = PRESENT

15. JUVENILE PLANT GROWTH HABIT:

[2] 1 = PROSTRATE 2 = SEMI-ERECT 3 = ERECT

16. SEED:

[1] Shape: 1 = OVATE 2 = OVAL 3 = ELLIPTICAL

[1] Cheek: 1 = ROUNDED 2 = ANGULAR

[2] Brush: 1 = SHORT 2 = Midlong 3 = LONG

[1] Brush: 1 = NOT COLLARED 2 = COLLARED

[4-5] Phenol reaction (See instructions): 1 = IVORY 2 = FAWN 3 = LT. BROWN 4 = BROWN 5 = BLACK 4=98% Brown 5=2% Black

[3] Color: 1 = WHITE 2 = AMBER 3 = RED 4 = PURPLE 5 = OTHER (Specify) _____

[5.8] MM. LENGTH

[2.9] MM. WIDTH

[36] GM. PER 1000 SEEDS

17. SEED CREASE:

[1] Width: 1 = 60% OR LESS OF KERNEL 'WINOKA' 2 = 80% OR LESS OF KERNEL 'CHRIS' 3 = NEARLY AS WIDE AS KERNEL 'LEMHI'

[1] Depth: 1 = 20% OR LESS OF KERNEL 'SCOUT' 2 = 35% OR LESS OF KERNEL 'CHRIS' 3 = 50% OR LESS OF KERNEL 'LEMHI'

18. DISEASE: (0 = Not Tested, 1 = Susceptible, 2 = Resistant) 3=Moderately Susceptible 4=Moderately Resistant

[4] STEM RUST (Races) _____

[4] LEAF RUST (Races) field races

[0] STRIPE RUST (Races) _____

[0] LOOSE SMUT

[0] POWDERY MILDEW

[0] BUNT

[1] OTHER (Specify) Soil Borne Mosaic Virus

19. INSECT: (0 = Not Tested, 1 = Susceptible, 2 = Resistant) 3=Moderately Susceptible 4=Moderately Resistant

[0] SAWFLY

[0] APHID (Bydv.)

[0] GREEN BUG

[0] CEREAL LEAF BEETLE

[0] OTHER (Specify) _____

HESSIAN FLY RACES: [4] GP [0] A [0] B [0] C [0] D [0] E [0] F [0] G

20. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED:

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant tillering	Wings	Seed size	Wings
Leaf size	Wings	Seed shape	Wings
Leaf color	Wings	Coleoptile elongation	Wings
Leaf carriage	Wings	Seedling pigmentation	Wings

INSTRUCTIONS

GENERAL: The following publications may be used as a reference aid for the standardization of terms and procedures for completing this form:

(a) L.W. Briggle and L. P. Reitz, 1963, Classification of Triticum Species and Wheat Varieties Grown in the United States, Technical Bulletin 1278, United States Department of Agriculture.

(b) W.E. Walls, 1965, A Standardized Phenol Method for Testing Wheat Seeds for Varietal Purity, contribution No. 28 to the handbook of seed testing prepared by the Association of Official Seed Analysts. (See attachment.)

LEAF COLOR: Nickerson's or any recognized color fan should be used to determine the leaf color of the described variety.

Exhibit D

Additional Description of Meggie

Meggie is a hard red winter wheat bred and developed by North American Plant Breeders Inc. It was tested as the experimental number HW79-36.

Meggie is a intermediate-height semidwarf variety with good straw strength, medium maturity and fair winterhardiness. Milling and baking properties are acceptable.

Juvenile plant growth habit is semi-erect. Plant color at boot is green with an erect, twisted flag leaf. Head shape is tapering to strap, middense, awned and head color is white at maturity. Glumes are of medium length and width with oblique shoulders and acuminate beaks. Seed shape is ovate to elliptical with rounded cheeks. Seed crease width is narrow and depth is shallow.

Meggie is adapted to southern Iowa, Missouri, southern Nebraska, central and eastern Kansas.

North American Plant Breeders

YEAR: 1983 — HARD RED WINTER WHEAT QUALITY — PAGE 1

YEAR	SAMPLE NAME	LOC	WHEAT--FLOUR QUALITY: TEST WT.	WHT PROT	FLR YLD	FLR PROT	FLR ASH	MIX CURVE	BAKING QUALITY: ABS.	MIX TIME	DOUGH CHAR	LOAF VOL	CRUMB GRN	CRUMB TEX	CRUMB COL	MILL SCORE	BAKE SCORE	TOTAL SCORE
			lb/Bu	14%mb	%	14%mb	14%mb	R	%	min	R	cc	R	R	R			
81	HW79-36	LK	54.2	14.2	66.9	13.3	0.425	9	65.0	2.8	8	1000	8	9	9	77-C	90-A	167-B
81	HW79-36	HN	61.0	11.2	67.7	10.2	0.353	5	59.0	4.3	8	840	8	7	9	63-D	75-C	138-D
81	HW79-36	BR	62.0	11.0	70.0	10.8	0.365	5	63.0	2.5	9	840	8	8	8	70-C	80-B	150-C
82	HW79-36	CK	56.9	12.6	68.3	11.1	0.000	6	61.0	4.5	9	775	7	8	8	69-D	77-C	146-C
82	HW79-36	BK	58.1	13.2	71.4	12.6	0.000	7	62.0	3.0	8	900	9	9	9	87-B	86-B	173-B
	AVERAGE		58.4	12.4	68.9	11.6	0.381	6	62.0	3.4	8	871	8	8	9	72-C	82-B	154-C
81	TAM 105	LK	54.0	14.6	68.4	13.6	0.397	8	64.0	3.8	9	1000+	7	8	9	78-C	93-A	171-B
81	TAM 105	HN	58.8	12.4	68.2	11.1	0.341	5	59.0	3.8	8	800	7	7	8	67-D	73-C	140-C
81	TAM 105	BR	62.0	11.9	71.6	11.4	0.349	3	62.0	1.5	8	735	6	7	8	69-D	61-D	130-D
82	TAM 105	CK	56.8	12.8	69.1	11.5	0.000	7	62.0	4.0	9	870	8	8	9	75-C	85-B	160-B
82	TAM 105	BK	57.0	12.0	72.7	10.5	0.000	5	60.0	3.3	7	850	8	8	9	71-C	77-C	148-C
	AVERAGE		57.7	12.7	70.0	11.6	0.362	6	61.4	3.3	8	861	7	8	9	76-C	79-C	155-C

GRADES: A-EXCELLENT B-GOOD C-ACCEPTABLE D-QUESTIONABLE F-UNACCEPTABLE
R=RATINGS: 9-10=EXCELLENT 8=GOOD 7=ACCEPTABLE 5-6=QUESTIONABLE 1-4=UNACCEPTABLE

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